



Faculty of Cognitive Sciences and Human Development

**DIGITAL DIVIDE AND INTERNET USAGE IN MALAYSIAN
HOMES**

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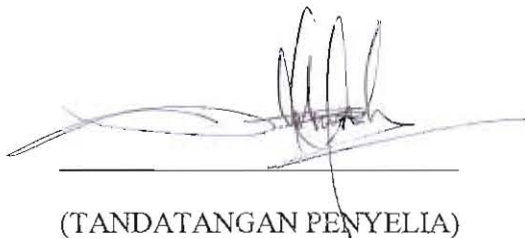
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ABSTRACT

DIGITAL DIVIDE AND INTERNET USAGE IN MALAYSIAN HOMES

Magdelina Muring Mutang

Digital Divide refers to the emergence of gap that exists between individuals with and those without access to or effectively uses information and communications technology (ICT). This preliminary exploratory study was conducted at two different locations (urban and rural) in Sarawak, which are Kuching and Limbang. The research samples involved four families consisting parents and their kids. This research used a case study method and there were specifically three methods for gathering information; (i) documentary analysis, (ii) in-depth interview and (iii) observation. The Digital Divide exists in the family from rural area, whereas there is no Digital Divide exists in the family from urban area. Even though there is no Digital Divide that exists in the families from urban area, there exists the problem of Internet usage by the children. The findings from this study had successfully identified few factors leading to Digital Divide and some problem/danger of the Internet usage at home. There are also recommendation and a few partial solutions of the problem/danger of the Internet usage at home. This research was conducted, with the intention, to spread awareness and to increase effort to overcome the problems and potential danger of the Internet usage at home. It is hoped that this study could spark interest and encourages further study of Digital Divide and Internet usage in Malaysian homes.

ABSTRAK

'DIGITAL DIVIDE' DAN PENGGUNAAN INTERNET DALAM RUMAH PENDUDUK MALAYSIA

Magdelina Muring Mutang

Digital Divide adalah jurang yang wujud antara individu yang mengakses dan mengguna secara efektif teknologi maklumat dan komunikasi dengan individu yang tidak mengakses dan mengguna secara efektif teknologi maklumat dan komunikasi. Kajian telah dijalankan di Sarawak dan melibatkan dua lokasi yang berbeza iaitu Kuching (bandaraya) dan Limbang (pedalaman). Sampel kajian melibatkan empat buah keluarga yang terdiri daripada ibubapa dan anak-anak mereka. Kajian yang menggunakan kajian kes ini melibatkan tiga kaedah pengumpulan data iaitu (i) kajian dokumentari (ii) temuramah secara mendalam dan (iii) pemerhatian. Digital Divide wujud dalam keluarga di kawasan pedalaman. Manakala tidak wujud Digital Divide dalam keluarga di kawasan bandaraya. Walaupun Digital Divide tidak wujud dalam keluarga di kawasan bandaraya, namun terdapat masalah penyalahgunaan Internet oleh anak-anak. Hasil kajian juga telah mengenalpasti beberapa faktor yang menyumbang kepada kewujudan Digital Divide dan beberapa masalah dan bahaya penggunaan Internet di rumah. Tujuan kajian ini dijalankan adalah untuk memupuk kesedaran dalam diri setiap orang dan seterusnya meningkatkan usaha untuk mengatasi masalah dan bahaya penggunaan Internet di rumah. Diharapkan kajian ini juga dapat menarik minat dan menggalakkan kajian tentang Digital Divide dan penggunaan Internet dalam rumah penduduk Malaysia pada masa akan datang.

CHAPTER 1

INTRODUCTION

1.0. Introduction

In the later half of the 1990s, as information and communications technology (ICT) development pervasively increased, the term Digital Divide emerged. Digital Divide refers to the emergence of broadening gaps that exists between individuals with and those without access to or effectively uses information and communications technology (ICT). The gaps are usually concerned with economic, social and cultural issues, such as income, age, education, gender, ethnic background, and physical handicaps (Shuho, 2004). More specifically, the digital divide is often measured by personal computer ownership and internet access (Kastsinas & Moeck, 2002; Parker, 2003, cited in Huang & Russell, 2006).

In this era of globalization, the issue of Digital Divide became well-known as it occurs within and between organizations including government and private sector, education field, businesses, households and many more. Digital Divide is actually a multiple dimensions problem. People see the dimension of divide from several different aspects that cause the Digital Divide, such as technical aspect, social aspect,

global aspect, democratic aspect and so on. The focus of this research is therefore to look into this problem as Digital Divide may exist within a household. This chapter presents the research background, problem statement, objective, research questions, significance of the research, and limitation of the research.

1.1. Research Background

Based on the previous research, there are many different types of Digital Divides (Carvin 2000, Fallis, 2004, Hongladarom, 2004, Krisana, 2004, Shuho, 2004, etc). The Digital Divide between rich and poor individuals is very conspicuous in term of owning the electronic devices (personal computer, laptop, PDA, etc.) to access the digital information through the Internet. The poor individuals are not able to own the devices as the price is high. Meanwhile, the high price is not a big barrier to the rich individuals to own the electronic devices as they can afford it. It is common to see at least a computer with Internet connection in the house of rich families and individuals. As compared to poor families and individuals, they do not have a computer and Internet in their house and they even never heard of the Internet.

Digital Divide between urban and rural communities has emerged due to the lack of ICT facilities and infrastructure. In gaining access to information, geography alone places rural people at a disadvantage compared to urbanites before communications are taken into account (Songan et al., 2004). The ICT facilities and infrastructure to access the Internet is usually limited or there are no facilities at all in the rural areas. The lack of ICT facilities places rural communities being left behind and have no access to information as compared to the communities in the urban area. In some rural and remote areas, there are wireless telecommunication networks provided by the private telecommunications provider but the cost is very expensive. The majority of the rural communities have low income and therefore could not afford to own a computer and access the Internet especially through the expensive wireless

telecommunication network. Meanwhile, most of the urban communities are more expose to use the Internet since the ICT facilities are well equipped and they are able to adopt, access, and use ICT to meet their needs.

Digital Divide also occurs between individuals who are computer literates and those who are illiterates. Most of these illiterates are not familiar in using high-tech equipment like computer and other related ICT instruments. Some of them also have a natural fear of new technologies since these high-tech equipments are not friendly to them (BECTA, 2001, Harris et al, 2001, cited in Shahren, 2006). The natural fear of new technologies prevents them from gaining the advantages to access digital and network information sources.

1.2. Problem Statement

Most of the previous studies on Digital Divide are concern mainly on the 'information haves' and 'information have-nots'. The 'information haves' is a term refers to those who have access to information, while 'information have-nots' is a term refers to those who do not have access to information. Little have been heard of the Digital Divide within the vicinity of homes which have the privilege to use ICT and the Internet.

Digital Divide has a potential to bring negative impacts at home. Nowadays, young kids as early as two year old and above and teenagers are exposed to the ICT and the Internet. The use of the Internet is not limited as a resource for gaining information, purchase goods and services but also for education, career opportunities as well as entertainment. Internet has created a space and often calls a cyber world that has no boundary. It enables people to wander around wherever they want to as the cyber world is free to explore. This includes visiting the immoral web sites and red zones (adult places) (Shahren, 2006). Young kids and teenagers are exposed to the danger

of being introduced to illicit materials (porno, hate, home-made weapons, negative propagandas, privacy issues, cyberbullying, internet addiction, negative blogging) when they have unlimited and uncontrolled access to internet (Shahren, 2006), as well as exposed to bad elements (rapist, scamp, fraud, etc).

Parents who do not use computer or do not know about the internet are more likely to disregard or pay no attention to their kids accessing the internet since it may look safe sitting in front of the computer. This creates an unhealthy environment since kids' usage of computer are not controlled or monitored (Sullivan, 2002, cited in Shahren, 2006).

Digital Divide is also concern the content of information. The value of the internet can be directly correlated to the value of its content (Carvin, 2000). It seems the problem of Digital Divide is solved when access to information is made easier. However, it is not very important to give people access to the internet when all you can find online is 'chatting', shopping, Pokemon trading clubs, and porn (Carvin, 2000). Many of web-based information are simply not relevant to the real needs. At home, kids need to be taught how to use information available in the internet and parents should play a greater role in monitoring their kids' internet usage. It is very important to make the internet meaningful spaces by producing valuable information.

The Digital Divide between parents and kids undoubtedly bring in the dangers and many problems may arise that could lead to devastating effect. It is very important to be alert about the Digital Divide at home's impact to the individual, society, country, and universally. But, there is no known study or research concerning the Digital Divide, specifically at home, either in Malaysia or other countries. There is a need for an in-depth research concerning the Digital Divide at home. It is therefore important to study the factors that could lead to the Digital Divide at home and to find out the dangers and problems that may arise. Furthermore, there is a need to find solutions to

bridge the Digital Divide at home to ensure that ICT and the Internet is not a time bomb but a necessities and a tools that upgrades human life.

1.3. Research Objectives

- To find out the existence of Digital Divide at home.
- To identify the factors that contributes to Digital Divide at home.
- To find out the problems and potential dangers of Internet usage at home.
- To find out the solutions to the problems and potential dangers of Internet usage at home.

1.4. Research Questions

There are four research questions serving a framework of this research;

- Is there any Digital Divide in Malaysian homes?
- What are the possible factors that could contribute to Digital Divide at home?
- What are the problems and potential dangers of Internet usage at home?
- What are the solutions to the problems and potential dangers of Internet usage at home?

1.5. Definition of Terms

1.5.0. Conceptual Definition

- Digital Divide

Shuho (2004) generally defined the Digital Divide as unequal access to digital and network sources, including the internet, and opportunities to learn using information and communication technologies. The gaps are usually concerned

with economic, social and cultural issues, such as income, age, education, gender, ethnic background, and physical handicaps (Shuho, 2004).

1.5.1. Operational Definition

- Digital Divide

Digital Divide refers to the emergence of broadening gap that exists between individuals with and those without access to or effectively use information and communications technology (ICT).

1.6. Significance of the Study

This research was conducted to help us to understand more about the factors leading to Digital Divide, especially at home and make us more alert to the problems and potential dangers of Internet usage and Digital Divide at home. It was also conducted to give awareness to each and everyone of us to increase effort to overcome the problems and potential dangers of Internet usage at home. This study contributes and encourages further study of Digital Divide and Internet usage in Malaysia.

1.7. Limitation of the Study

This research was only a preliminary exploratory study of Digital Divide at home. It does not involves all Malaysian since the interviews only conducted with four families from Sarawak and the research only focus on two different locations. The locations are Kuching and Limbang.

1.8. Summary

This chapter describes the research background, problem statement, objective, research questions, significance of the research, and limitation of the research.

CHAPTER 2

LITERATURE REVIEW

2.0. Introduction

In the mid 1990s, the term Digital Divide arrived at fame as a way to describe the emergence of broadening gap that exists between individuals with and those without access to and effectively use information and communications technology (ICT). There are many factors that contribute to the existence of Digital Divide such as socioeconomic or geographical factors, educational, attitudinal and generational factors, or physical disabilities (Cullen, 2003) and many other factors. At the present time, many research and debate continue to focus on Digital Divide as it became a global well-known phenomenon. This chapter presents the literature review of previous studies on issues related to Digital Divide in Malaysia and other countries.

2.1. The Existence of Digital Divide

Research on Digital Divide has been making steady progress all over the world. However these research works are mostly concerning the use and access to computer, Internet and other Information and Communications related instruments. The broad

spectrum of the research works concentrates on social, cultural and economic issues in Digital Divide (Carvin 2000, Jackson et al, 2004, McLaren & Zappala, 2002, Shuho, 2004, Parker, 2003, etc) either published in electronic or non-electronic version. There are some research on Digital Divide (Fourie & Bothma, 2006, Huang & Russell, 2006, Norizan, 2002, Shahren, 2006, etc.) address the issue in the field of education. Digital Divide also received a relatively attention from philosophers (Hongladarom, 2004). Graham (2002) cited by Hongladarom (2004) did mentioned about philosophical account of the Digital Divide.

Most of the research and published articles dealing with the socio demographic aspect (age, ethnics/races, education level, gender, income, linguistic background), geographical/ location aspect, attitudinal aspect and infrastructure/technical aspects of Digital Divide. No known previous research conducted deals directly on the Digital Divide at home.

2.2. The Factors that Contribute to Digital Divide

The socio demographic characteristics aspect, technical aspect, geographical aspect and attitudinal aspect influenced the access to the internet. All these aspects may lead to the factors that contribute to Digital Divide at home.

2.2.0. Digital Divide: Socio Demographic Aspects

There are some socio demographic characteristics were recognized which influenced in access to the internet, including age, education, ethnicity / race, gender, income and linguistic background (Almudena, 2006, Mutula, 2005, National Telecommunications and Information Administration, 2000, Songan et al, 2004, Zheng, 2006, etc).

2.2.0.0. Age

The aged digital divide is much more significant between those aged 25-29 and those aged 55-59. The 2000 Australian Bureau of Statistics (ABS) catalogue titled 'Use of the Internet by Householders, Australia', cited by McLaren and Zappala (2002) noted that 'adults aged over 55 are less likely to have Internet access as compared to younger groups in the population'. Adults in their late 20s are much more likely to see ICT and scientific/technological skills as very useful in their lives, and say they possess these skills, as compared to those in their late 50s (Almudena, 2006). Same goes to those aged 15-24 and those who are still in school, they are very aware of an ICT skills gap (Almudena, 2006).

An independent study conducted for British Telecom (BT) painted a detailed picture of access to home computing and Internet in the United Kingdom in 2004. The information of the profile of the digitally excluded population by age in this study is based on the information from the British Household Panel Survey (BHPS). According to this study, 'adults who are digitally excluded and living below the poverty line (60% of median income) are also likely to be older (55+) than the rest of the digitally excluded' (no author, 2004). The highest percentage of non-digitally excluded is the group contains higher proportions in the younger age groups (16-54). They are the population living above the poverty line.

2.2.0.1. Education

The study conducted for British Telecom (BT) also reported the digitally excluded population by education levels. There are some key points to be considered from the information of the profile of the digital inclusion in the United Kingdom in 2004. 12.9% of the UK adults have a first degree or higher, where almost half of them (6.1%) are digitally excluded. 8.9% of the digitally excluded with a first degree or

higher are above poverty line while 6.1% are below poverty line. 45.8% of the UK adults are digitally excluded have performed less well in the education system. 61.4% of the digitally excluded with less well performance in education are living below poverty line.

People with low educational or with low literacy levels are excluded by the digital divide as being disadvantage in their uptake of ICTs (Cullen, 2003). The low levels of computing and technology skills prevent the illiterates from using the ICTs tools and most of these illiterates are not familiar in using the internet.

Technological skills divides are also closely linked to education levels. According to Zheng (2006) word like 'internet' and 'surfing' are still unfamiliar to many rural residents in China due to low educational levels and the lack of sufficient way to get information through the Internet.

According to National Telecommunications and Information Administration (2000), 4% of adults with only an elementary school education used the Internet, while 74.5% of those with at least a four-year college degree did.

Five-through seventeen-year-olds living with more highly educated parents are more likely to use computer and Internet than those living with less well-educated parents (Callison, 2004).

2.2.0.2. Ethnicity / Race

A study in the US by Hoffman and Novak (1998), cited in Hoffman, Novak and Schlosser (2000) found that 'Whites were significantly more likely than African Americans to have a home computer in their household and also slightly more likely to have PC access at work'. The data from the Internet Demographic Study conducted in August and September 1997 indicated that 'Whites were more likely than African

Americans to have access to the internet, and to have ever used the Web' (Hoffman, Novak & Schlosser, 2000). According to the survey, 24.34% of White had ever used the Internet, as compared to 18.76% of African Americans (Hoffman, Novak & Schlosser, 2000).

While poverty and low incomes cut across ethnic divides in Malaysia, the majority of those who are poor and have low incomes are Bumiputeras (no author, 2006). The income divide among three major ethnics (Bumiputeras, Chinese and Indian) in Malaysia has remained a significant factor influencing ICT and knowledge affordability issues (no author, 2006).

2.2.0.3. Gender

The role of gender accessibility to the Internet is unclear. Some studies find that females have lower take-up rate or percentage in using the Internet as compared to males (Australian Bureau of Statistics (ABS), 2000, cited in McLaren & Zappala, 2002), while other studies find that gender plays little to no role in access to the Internet (National Office for the Information Economy (NOIE), 2002, cited in McLaren & Zappala, 2002).

In Spain, there is a large gender inequity in term of accessing the Internet. The data from the 2001 AIMC survey, cited by Almudena (2006) shows that 70.5 % of the total sample of Internet users in Spain are men, compared to only 29.2 % who are women. The reasons for this inequality are unclear, but may be because of the education levels or motivation and tendency to engage in learning ICT skills (Almudena, 2006).

There is too little information relating to the gender dimension of Digital Divide in Malaysia. Available information indicates that gaps are particularly evident with

regard to adult illiteracy, enrolment in technology related courses, representation in the administrative and managerial sector, presence in the professional and technical workforce, and comparative income (no author, 2006). Preliminary studies have shown that in Malaysia, females constitute only about half the number of males who are currently online (no author, 2006).

2.2.0.4. Income

Levels of income play an important role in term of determining who will benefits from the ICTs. Usage of the Internet is related to one's income level. National Telecommunications and Information Administration's 1999 study, *Falling through the Net: Defining the Digital Divide*, revealed that 12.1 % of US persons using the Internet, either at home or outside home, are those with the lower end of income scale (\$5000-\$9999). 58.9% of US persons using the Internet, at any location, are those with the highest income scale (\$75000++) (National Telecommunications and Information Administration, 2000, p.30). According to this study, levels of income also correlate with the location where persons access the Internet. Thus, persons with incomes of less than \$35,000, use the Internet more often outside the home, while for those earning \$35,000 or more, use the Internet more often at home (National Telecommunications and Information Administration, 2000, p.30).

According to Callison (2004), five-through seventeen-year-olds living in households with higher family incomes are more likely to use the Internet than those living in lower income households.

2.2.0.5. Linguistic Background

Songan et al (2004) say that one of the challenges that are faced in using ICTs to bridge Digital Divide in rural area is language. Most of the content of the materials

that are available on the Internet are written in English, which are not understood by many people in the rural area (Songan et al, 2004). Most of the rural communities in Malaysia, for instance, the communities in Bario have a very poor command of the English language. They face a challenge to learn and familiarize themselves to use ICT and the Internet. This is not easy because most of the resources available on the Internet are written in English, with only a few written in the Malay language.

A study by the researchers from the Tomas Rivera Policy Institute (2002) in the USA, cited from Mutula (2005), indicated that 'people with limited English-speaking skills lagged behind their English-speaking counterparts in access to computers and the Internet'. In 2002, the use of English in computer-based communication was estimated at a high of 80 % (Warschauer, 2001 cited in Mutula, 2005). In sub-Saharan Africa, a large percentage of local people can neither read nor write in English, and 'as potential users of computers they are at disadvantaged' (Mutula, 2005). In addition, there is none of the local languages there that constitute the language in the Internet and computing (Mutula, 2005).

According to Shuho (2004) language factor is one of the problems for Japanese using new information and communication technology (ICT). Most of the Japanese feel uncomfortable accessing the Internet because of their difficulty with the English language and a non-alphabet typing culture (Shuho, 2004).

Reading and understanding the forms or web pages that are commonly written in the English is not usually a problem for people from the middle income group (no author, 2007) However, many people who are poor have little or no access to the formal register, and thus may be unable to understand properly what is written in those documents or web pages (Payne 1996, cited in no author, 2007).

2.2.1. Digital Divide: Geographical Aspect

Where a person lives does appear to influence their home access to the Internet. The West of the United States is clear-cut leader for both computer penetration (48.9%) and internet access (31.3%), while the South America at 38.0% for PC penetration and 23.5% for Internet access (National Telecommunications and Information Administration, 2000). The gap between city and country in terms of internet access is decreasing, with 40% of all metropolitan households having access compared to 32% of all metropolitan households in non-metropolitan areas (Australian Bureau of Statistics, 2000, cited in McLaren & Zappala, 2002).

2.2.2. Digital Divide: Attitudinal Aspect

Kaigo and Sasaki (2001) and Kaigo (2002) cited by Shuho (2004), pointed out that 'the traditional Japanese culture or behaviour called 'nigate ishiki' (a self conscious difficulty dealing with something or someone, which leads to shyness or avoidance) influenced computer and the Internet use among the Japanese and was useful in explaining information gaps related to gender and age'. According to the survey, the Japanese 'nigate ishiki' leads to lack of self confidence and fear in using new ICT due to difficulty in English language (Shuho, 2004). The report also found that the fear in using new ICT exists much more commonly among adults than children and as the result; it has a negative influence on attitudes toward ICT (Shuho, 2004).

2.2.3. Digital Divide: Technical Aspect

The disabled population are at high risk of being digitally excluded. According to a study conducted for British Telecom, 'of the 3.4 million adults in United Kingdom who are registered disabled in 2004, 2.4 million of them (7:10) are digitally excluded'. Not all online centres have facilities for disabled people and the not-user-